

Serial No. 10/533,014
Atty. Doc. No. 2002P12570WOUS

Amendments To The Claims:

Please amend the claims as shown.

1 – 20 (canceled)

21. (currently amended) A turbo engine, comprising:

a plurality of rotor blades made of an electrically conducting material having an electrically insulating surface and arranged on a rotor shaft that is rotatably mounted in a housing and electrically connected to a reference potential or a plurality of fixed guide vanes made of an electrically conducting material having an electrically insulating surface with the electrically conducting material of the guide vanes electrically connected to the reference potential; and

a measuring element operating in a kilohertz frequency range for measuring an electric ~~and/or~~ magnetic field strength set up by a first charge distribution on the surface of the rotor blades or guide vanes resulting from charged particles being deposited on the surface by an ionized gas flowing over the surface, the first charge distribution generating a first emission in the kilohertz frequency range lower than a second emission generated in a gigahertz frequency range by a second charge distribution resulting from tribo-charging so that a processing requirement for measuring the first emission resulting from the deposited charged particles is less than a processing requirement for measuring the second emission resulting for tribo-charging.

wherein the measuring element is arranged near the rotor blades ~~and/or~~ near the guide vanes.

22. (currently amended) The ~~turbine-turbo~~ engine as claimed in claim 21, wherein at least one measuring element is arranged on the rotor shaft in the region of the guide vanes.

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23. (currently amended) The turbo engine as claimed in claim 22, wherein at least one measuring element is arranged in the region of the rotor blades and at least one measuring element is provided for measuring an electric ~~and/or~~ magnetic field strength set up by ~~a~~ the first charge distribution on the surface of the rotor blades.

24. (previously presented) The turbo engine as claimed in claim 23, wherein at least one measuring element is formed by a coaxial antenna.

25. (previously presented) The turbo engine as claimed in claim 23, wherein at least one measuring element is connected to a measuring unit.

26. (previously presented) The turbo engine as claimed in claim 25, wherein the measuring unit contains a monitoring unit.

27. (previously presented) The turbo engine as claimed in claim 25, wherein the measuring unit has a communication link to a control center.

28. (currently amended) The turbo engine as claimed in claim 26, wherein the monitoring unit comprises a signaling ~~and/or~~ an alarm device.

29. (previously presented) The turbo engine as claimed claim 26, wherein the turbo engine is shut down by the monitoring unit.

30. (previously presented) The turbo engine as claimed in claim 23, wherein the electrically insulating surface is formed by a coating.

31. (previously presented) The turbo engine as claimed in claim 23, wherein the turbo engine is a gas turbine.

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32. (currently amended) A method for determining damage to an electrically insulating surface of a turbine component, comprising:

providing a plurality of turbine blades or vanes made of an electrically conducting material and arranged within a turbo engine;

creating an electric ~~and/or~~ magnetic field strength by a first charge distribution on the surface of the turbine blade or vane, the first charge distribution resulting from charged particles being deposited on the surface by an ionized gas flowing over the surface, the first charge distribution generating a first emission in a kilohertz frequency range lower than a second emission generated in a gigahertz frequency range by a second charge distribution resulting from tribo-charging;

measuring the electric ~~and/or~~ magnetic field strength by a measuring element in the kilohertz frequency range using a lower frequency processing technique for measuring the electric or magnetic field strength generated by the first emission compared to a higher frequency processing technique required for measuring the second emission in the gigahertz frequency range; and

determining a deviation from a definable threshold value.

33. (previously presented) The method as claimed in claim 32, wherein the measuring element is arranged on a rotor shaft in the region of the vanes.

34. (previously presented) The method as claimed in claim 32, wherein the deviation is transmitted to a control center.

35. (previously presented) The method as claimed in claim 32, wherein an alarm is output when the definable threshold value is exceeded.

36. (previously presented) The method as claimed in claim 32, wherein the turbo engine is shut down when the definable threshold value is exceeded.

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37. (previously presented) The method as claimed in claim 32, wherein a measurement signal supplied by the at least one measuring element is transformed by a Fourier transformation, by a measuring unit.

38. (previously presented) The method as claimed in claim 37, wherein a FFT transformation unit is used.

39. (currently amended) The method as claimed in claim 38, wherein a result of the transformation is displayed and/or signaled.

40. (previously presented) The method as claimed in claim 39, wherein the result of the transformation is compared with the definable threshold value.